

THAT WHICH IS CLAIMED IS:

1. A method of reducing fecal contamination in an animal, which method comprises providing to the animal drinking water containing a microbiocidally-effective amount of halogen-based microbiocide resulting from mixing with water:

- A) a product formed in an aqueous medium from (i) bromine, chlorine, or bromine chloride, or any two or all three thereof, (ii) a water-soluble source of sulfamate anion, and (iii) a water-soluble base; or
- B) at least one 1,3-dihalo-5,5-dialkylhydantoin in which one of the halogen atoms is a chlorine atom and the other is a chlorine or bromine atom, and in which each of the alkyl groups, independently, contains in the range of 1 to about 4 carbon atoms; or
- C) at least one 1,3-dibromo-5,5-dialkylhydantoin in which one of the alkyl groups is a methyl group and the other alkyl group contains in the range of 1 to about 4 carbon atoms; or
- D) any two or more of A), B), and C) hereof.

2. A method according to Claim 1 wherein A), in the form of an aqueous alkaline concentrated solution containing at least about 50,000 ppm (wt/wt) of active bromine, is diluted one or more times with water to provide said microbiocidally-effective amount of halogen-based microbiocide in said drinking water.

3. A method according to Claim 2 said aqueous alkaline concentrated solution contains at least about 100,000 ppm (wt/wt) of active bromine, has an atom ratio of nitrogen from (ii) to active bromine from (i) that is greater than about 0.93, and has a pH of at least about 12.

4. A method according to Claim 2 said aqueous alkaline concentrated solution contains in the range of about 145,000 to about 160,000 ppm (wt/wt) of active bromine, has

an atom ratio of nitrogen from (ii) to active bromine from (i) that is greater than about 1, and has a pH in the range of about 13 to about 14.

5. A method according to Claim 1 wherein B), in the form of solids or in the form of a water solution or slurry, is mixed with water and optionally the water mixture is further diluted one or more times with water, to provide said microbiocidally-effective amount of halogen-based microbiocide in said drinking water, and wherein B) before it is mixed with any water is N,N'-bromochloro-5,5-dimethylhydantoin or a mixture composed of more than 50 wt% of N,N'-bromochloro-5,5-dimethylhydantoin together with less than 50% wt% of 1,3-dichloro-5,5-dimethylhydantoin and 1,3-dichloro-5-ethyl-5-methylhydantoin.

6. A method according to Claim 1 wherein C), in the form of solids or in the form of a water solution or slurry, is mixed with water and optionally the water mixture is further diluted one or more times with water, to provide said microbiocidally-effective amount of halogen-based microbiocide in said drinking water, and wherein C) before it is mixed with any water is 1,3-dibromo-5,5-dimethylhydantoin.

7. A method according to Claim 6 wherein said 1,3-dibromo-5,5-dimethylhydantoin before it is mixed with any water is in the form of granules having a compression strength of at least about 15 pounds per inch and wherein said granules are devoid of any binder or other component tending increase the compression strength of the granules.

8. A method according to any of Claims 1, 2, 3, 4, 5, 6, or 7 wherein said animal is poultry, swine, sheep, or cattle.

9. In the processing of at least one animal for at least one meat product, the improvement which comprises reducing fecal contamination in said at least one animal prior

to slaughter, which method comprises providing to the animal as its exclusive or substantially exclusive source of drinking water during a period prior to slaughter, drinking water containing a microbiocidally-effective amount of halogen-based microbiocide resulting from mixing with water:

- A) a product formed in an aqueous medium from (i) bromine, chlorine, or bromine chloride, or any two or all three thereof, (ii) a water-soluble source of sulfamate anion, and (iii) a water-soluble base; or
- B) at least one 1,3-dihalo-5,5-dialkylhydantoin in which one of the halogen atoms is a chlorine atom and the other is a chlorine or bromine atom, and in which each of the alkyl groups, independently, contains in the range of 1 to about 4 carbon atoms; or
- C) at least one 1,3-dibromo-5,5-dialkylhydantoin in which one of the alkyl groups is a methyl group and the other alkyl group contains in the range of 1 to about 4 carbon atoms; or
- D) any two or more of A), B), and C) hereof.

10. The improvement according to Claim 9 wherein said at least one animal is poultry, swine, sheep, or cattle.

11. The improvement according to Claim 9 wherein said microbiocidally-effective amount of halogen-based microbiocide in said drinking water is in the range of about 1 to about 100 ppm (wt/wt) expressed as Br₂.

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12. The improvement according to Claim 9 wherein said microbiocidally-effective amount of halogen-based microbiocide in said drinking water is in the range of about 4 to about 30 ppm (wt/wt) expressed as Br₂.

13. The improvement according to Claim 9 wherein said microbiocidally-effective amount of halogen-based microbiocide results from use of an aqueous alkaline concentrated

solution formed in an aqueous medium from (i) bromine, chlorine, or bromine chloride, or any two or all three thereof, (ii) a water-soluble source of sulfamate anion, and (iii) a water-soluble base, as the microbiocide that is mixed with water; and wherein prior to being mixed with the water said aqueous alkaline concentrated solution contains at least about 100,000 ppm (wt/wt) of active bromine, has an atom ratio of nitrogen from (ii) to active bromine from (i) that is greater than about 1, and has a pH of at least about 12.

14. The improvement according to Claim 9 wherein said microbiocidally-effective amount of halogen-based microbiocide results from use of N,N'-bromochloro-5,5-dimethylhydantoin as the microbiocide that is mixed with water.

15. The improvement according to Claim 9 wherein said microbiocidally-effective amount of halogen-based microbiocide results from use of a mixture composed of more than 50 wt% of N,N'-bromochloro-5,5-dimethylhydantoin together with less than 50% wt% of 1,3-dichloro-5-ethyl-5-methylhydantoin as the microbiocide that is mixed with water.

16. The improvement according to Claim 9 wherein said microbiocidally-effective amount of halogen-based microbiocide results from use of 1,3-dibromo-5,5-dimethylhydantoin as the microbiocide that is mixed with water.

17. The improvement according to any of Claims 13, 14, 15, or 16 wherein said at least one animal is fowl, swine, sheep, or cattle, and wherein said microbiocidally-effective amount of halogen-based microbiocide in said drinking water is in the range of about 1 to about 100 ppm (wt/wt) expressed as Br₂.

18. The improvement according to any of Claims 13, 14, 15, or 16 wherein said at least one animal is fowl, swine, sheep, or cattle, and wherein said microbiocidally-effective

amount of halogen-based microbiocide in said drinking water is in the range of about 4 to about 30 ppm (wt/wt) expressed as Br₂.

19. In a facility for processing of animals for at least one meat product, said facility having at least one container of drinking water accessible to at least one animal prior to slaughter, the improvement which comprises the presence in said drinking water of a microbiocidally-effective amount of halogen-based microbiocide resulting from mixing with water:

- A) a product formed in an aqueous medium from (i) bromine, chlorine, or bromine chloride, or any two or all three thereof, (ii) a water-soluble source of sulfamate anion, and (iii) a water-soluble base; or
- B) at least one 1,3-dihalo-5,5-dialkylhydantoin in which one of the halogen atoms is a chlorine atom and the other is a chlorine or bromine atom, and in which each of the alkyl groups, independently, contains in the range of 1 to about 4 carbon atoms; or
- C) at least one 1,3-dibromo-5,5-dialkylhydantoin in which one of the alkyl groups is a methyl group and the other alkyl group contains in the range of 1 to about 4 carbon atoms; or
- D) any two or more of A), B), and C) hereof.

20. The improvement according to Claim 19 wherein said microbiocidally-effective amount of halogen-based microbiocide results from use of A) as the microbiocide that is mixed with water; and wherein prior to being mixed with the water said aqueous alkaline concentrated solution of A) contains at least about 100,000 ppm (wt/wt) of active bromine, has an atom ratio of nitrogen from (ii) to active bromine from (i) that is greater than about 1, and has a pH of at least about 12.

21. The improvement according to Claim 19 wherein said microbiocidally-effective amount of halogen-based microbiocide results from use of N,N'-bromochloro-5,5-dimethylhydantoin as the microbiocide that is mixed with water.

22. The improvement according to Claim 19 wherein said microbiocidally-effective amount of halogen-based microbiocide results from use of a mixture composed of more than 50 wt% of N,N'-bromochloro-5,5-dimethylhydantoin together with less than 50% wt% of 1,3-dichloro-5-ethyl-5-methylhydantoin as the microbiocide that is mixed with water.

23. The improvement according to Claim 19 wherein said microbiocidally-effective amount of halogen-based microbiocide results from use of 1,3-dibromo-5,5-dimethylhydantoin as the microbiocide that is mixed with water.

24. The improvement according to any of Claims 19, 20, 21, 22, or 23 wherein said at least one animal is poultry, swine, sheep, or cattle, and wherein said microbiocidally-effective amount of halogen-based microbiocide in said drinking water is in the range of about 1 to about 100 ppm (wt/wt) expressed as Br₂.

25. The improvement according to any of Claims 19, 20, 21, 22, or 23 wherein said at least one animal is poultry, swine, sheep, or cattle, and wherein said microbiocidally-effective amount of halogen-based microbiocide in said drinking water is in the range of about 4 to about 30 ppm (wt/wt) expressed as Br₂.